

SMALL HYDRO'S EVOLUTION IN ONTARIO

The Rustic Past

Water power played a key role in Ontario's industrial development. In the early 1900s, many mills and factories were driven by electricity from hundreds of small independent hydro plants. After 1910, as Ontario developed an economical, centralized electrical system, small hydro plants were gradually abandoned as uneconomical.

The Modern Revival—Government Leadership

In the early 70s, rising energy costs rekindled interest in small hydro plants. Many of the 570 formerly developed sites became economically feasible to return to production, and contribute to Ontario's energy security.

In 1981, the Ontario ministries of Energy and Natural Resources began a program to encourage the development of small hydro sites. The program involves updating the inventory of available water power sites, assisting demonstration projects, funding feasibility studies, inspecting turbines, holding conferences, and producing publications.

Program staff are working to improve the financial climate, simplify regulatory approvals, reduce development costs and stimulate exports of Ontario's small hydro products and services.

Today—A Multi-Million Dollar Industry

Today, small hydro again plays a key role in Ontario's industrial economy—both as a secure source of energy and as a major export industry. Ontario is recognized as a world leader in small hydro technology. Ontario's rapidly-growing small hydro industry produced most of Canada's small hydro exports—about \$14-million in 1984.

SMALL HYDRO

HELPING TO BUILD ENERGY SECURITY FOR ONTARIO



The Fanshaw Dam Small Hydro facility, one of 12 government-assisted demonstration projects, was built in 1952 as a means of flood control, and is typical of hundreds of similar sites in Ontario. Ontario's Municipal Small Hydro Program offers assistance to municipalities, public utility commissions and conservation authorities to develop similar sites.



The Frontier Lodge Small Hydro facility demonstrates small hydro's potential for low-cost, secure energy supplies in remote areas without access to the provincial utility grid. Ontario's Northern Small Hydro Program offers assistance to businesses in remote areas of northern Ontario that currently depend on diesel fuel for electricity.

HELPING TO BUILD A NEW INDUSTRY FOR ONTARIO



Ontario's modern small hydro industry produces some of the most sophisticated and reliable equipment available in the world. Although this multi-million-dollar industry is still young, sales are rapidly growing at 20 to 30 per cent each year.



This small hydro plant in Indonesia is one of many similar facilities around the world that have been built using Ontario's products and expertise. Ontario's small hydro industry is very competitive in the world marketplace—a market that could be worth several billion dollars in the 1990's.

SMALL HYDRO

Exactly what is it?

Small hydro is a water power development with up to 10 megawatts in capacity. Smaller developments (under 100 kilowatts) are referred to as micro-hydro sites.

In Ontario, the capacity of most small hydro sites is less than 2 megawatts of electricity—enough to service 200 homes.

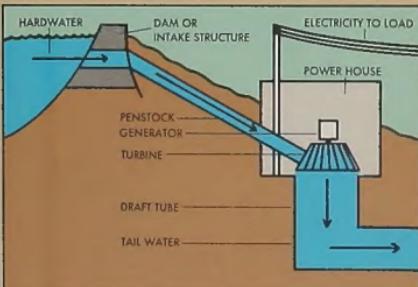
Ontario has more than 30,000 streams and rivers—hundreds of which represent potential sites for small hydro plants.

It has been estimated that 50 to 100 megawatts of small hydro will be developed by the year 2000. While this is a small amount by provincial standards, it will have a significant impact on local communities and businesses.

Some small hydro sites are connected to the province's utility grid, and it's often possible to negotiate with a local utility for the sale of surplus electricity. As well, Ontario Hydro has recently established a new rate structure that encourages the development of independent generating facilities.

At non-grid sites, small hydro plants can greatly reduce energy costs by replacing costly, diesel-generated electricity.

DIAGRAM OF A TYPICAL SMALL HYDRO PLANT



SMALL HYDRO ASSISTANCE PROGRAMS

Municipal Small Hydro Program

Provides assistance to municipalities, public utility commissions and conservation authorities.

Assists with turbine inspections at existing plants, by funding the first \$4,000 plus 50 per cent of additional costs up to \$8,000.

Assists feasibility studies to assess costs and benefits of developing new sites by funding 90 per cent of the studies' cost up to \$50,000, based on a positive pre-feasibility study undertaken at applicant's own expense.

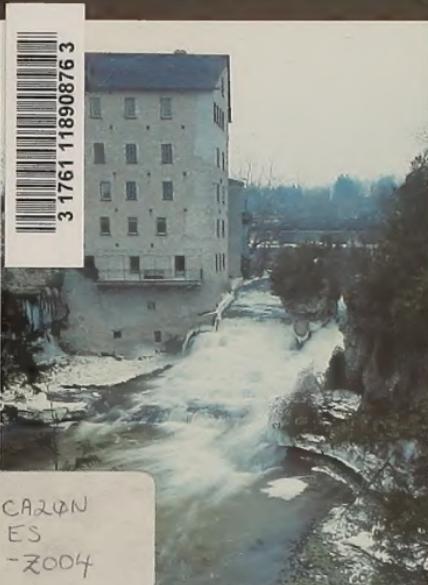
Northern Small Hydro Program

Provides assistance to commercial and industrial enterprises in remote areas of northern Ontario not connected to the utility grid.

Offers grants of up to one-third of eligible costs for small or micro-hydro installations to displace diesel-electric generation.

SMALL HYDRO

A NATURAL FOR ONTARIO



For further details and application forms, contact:



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